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09/960,432	09/22/2001	Yong Suk Choi	01-563	5567

7590

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EXAMINER

TUNG, TA HSUNG

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 06/04/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,432

Applicant(s)

CHOI IZAL

Examiner

T. TUNG

Group Art Unit

1753

Paper No. 3

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-25 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-25 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some* ☐ None of the:
 - ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

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Claims 1-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The disclosure is confusing in that it is not evident how the porous polymer achieves its porosity. From the specification (e.g. page 27, lines 8-12), a cellulose acetate porous polymer is made simply by dissolving the acetate along with a lipophilic polymer (polyurethane) in THF and dried for one day. Why would the resulting acetate polymer be porous? Is cellulose acetate inherently porous? If so, where is the basis for that in the disclosure? And would the cellulose acetate in membrane 22 of the Ross et al 3,691,047 patent be inherently porous?

lipophilic
polymer
(P16,
L20-21)

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 2, "or" is improper Markush language and should be --and--.

Claim 11, line 2, --a-- should be added after "is".

Claim 12, line 1, "conventional-type" is vague. First, "type" is indefinite. Second, "conventional" is indefinite in that it is not evident what constitutes a conventional reference electrode. Further, if the reference electrode being claimed is conventional, is applicant admitting that he is claiming an old reference electrode?

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Claim 12, line 6, "a" should be --the--, since the membrane has already been recited at line 2 of the claim.

Claim 18, lines 4-6, "a reference electrode material 11 insulated by the insulating film layer 9 in aqueous solutions" is not understood. What aqueous solutions are these? Sample solutions? Is applicant trying to state that the reference electrode material is isolated from sample solutions by the insulating film layer?

Claim 18, line 6, "a" should be --the--, since the membrane has already been recited at line 2 of the claim.

Claim 19, lines 2-6 appear to be redundant with wording at lines 1-3 of parent claim 1 (by way of claim 18).

Claim 19, line 4, "or" is improper Markush language and should be --and--.

Claim 19, lines 7-8, "the hydrogel layer" does not have antecedent basis.

Claim 19, line 9, "the double layered" does not have antecedent basis. Also, "layered" should be --layer--.

Claim 19 does not appear to be a proper dependent claim of claim 18, which is drawn to figure 3b and calls for the membrane 13 to be fixed to the reference electrode material 11. Claim 19 on the other hand appears to be drawn to figure 3a with the a double layer structure of a membrane 8 and an electrolyte hydrogel layer 12. In this figure, the membrane is not fixed to the electrode 11.

Claim 20, lines 2 and 7, "layered" should be --layer--.

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Claim 20, lines 2-5, the wording that the membrane "is covered with the reference electrode material 11" is misdescriptive. It appears that the electrode material is covered by the membrane.

Claim 21, line 2, "layered" should be --layer--.

Claim 23, line 2, "the hydrogel layer" does not have antecedent basis.

Claim 25, lines 2-3, it is unclear if the remaining ion-selective electrodes of the set aside from the working electrode is being positively claimed or not.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Battaglia et al 4,214,968.

Battaglia discloses an electrode membrane comprising a lipophilic polymer such as polyvinyl chloride, polyurethane, silicone rubber, cellulose esters and mixtures thereof. See col. 15, lines 36-57.

The combination of a cellulose ester with one of the other polymers would yield applicant's embodiment where the membrane comprises a porous polymer and a lipophilic polymer, since the cellulose ester is apparently inherently a porous polymer. Selecting any of the

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combinations set forth in Battaglia would have been obvious, because the patent teaches all such combinations.

Also, at col. 17, line 68; col. 32, line 54 and col. 33, line 36 of the reference, there is a teaching of adding a surfactant to the membrane. At col. 11, line 17, Battaglia discloses a suitable surfactant to be ethylene glycol. The combination of a lipophilic polymer with ethylene glycol would meet applicant's other embodiment of a membrane comprising a hydrophilic plasticizer and a lipophilic polymer. It would have been obvious to select this combination, since the patent teaches it.

As for the expression "reference electrode" (claim 1, line 1) to describe the membrane, that is merely an expression of intended use and has no patentable significance.

Claims 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Battaglia et al in view of Craig et al 5,958,201.

These claims differ by calling for the membrane to have an adhesion-promoting agent.

Craig discloses the addition of a silane to a membrane to promote its adhesion to a substrate. See col. 3, line 51. It would have been obvious for Battaglia to incorporate a silane into its membrane in view of Craig so as to improve its adhesion properties.

Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Battaglia et al in view of Ross et al.

These claims differ by calling for an electrode configuration comprising a housing, an internal electrolyte and the membrane fixed at an end of the housing.

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Ross discloses a conventional electrode configuration with a housing, an internal electrolyte and a membrane at an end of the housing. It would have been obvious for Battaglia to adopt the conventional electrode configuration of Ross, since the incorporation of known features from analogous prior art functioning as expected is within the skill of the art.

Claims 18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Battaglia et al in view of Cranny et al.

These claims differ by calling for the electrode to have a structure of an insulating substrate and a reference electrode on the substrate isolated from a sample by an insulating film layer.

Cranny discloses just such an electrode structure. See page 1558 and figure 1. It would have been obvious for Battaglia to adopt the electrode configuration of Cranny, since this configuration has a streamlined design and is conducive to miniaturization.

The examiner can be reached at 703-308-3329. His supervisor Nam Nguyen can be reached at 703-308-3322. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-872-9310.

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A handwritten signature in black ink, appearing to be 'Ta Tung', with a stylized flourish at the end.

Ta Tung

Primary Examiner

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